

MECHANIC STUDY GUIDE
Manual Transmission, Front & Rear Drive Axles
Automobile & Light Truck Repair

Listed below are a number of items and subjects which make up the mechanic certification test identified above. An individual's ability to pass the certification test will depend upon the amount of knowledge the person has concerning these items. **NOTE:** There could be up to 5 additional pre-test questions. These questions will not count but may be used on a later version of the test. Your answers to these pre-test questions will not affect your score. Since you won't know which they are, you should answer all questions.

Component R & R - 6%10%

Cluster gear remove & replace
Extension housing seal remove & replace
Synchronizer replacement

Transmission/Transaxle Diagnosis - 32%

Fluid diagnosis
Hard shifting complaints
Transmission v.s. transaxle comparison
Cluster gear end-play
Transaxle gear recognition from picture
Synchronizer problems & operation
3, 4 & 5 speed diagnosis from picture
(4 questions)
Overdrive operation
Extension housing bushing wear
Noise diagnosis
Defective output shaft

Final Drive - 30%

Ring gear run-out
Noise diagnosis
Differential diagnosis
Differential pinion nose angle
Ring & pinion gear sets
Ring & pinion backlash
Pinion bearing preload
Final drive ratio
Pinion seal remove & replace
Limited slip diagnosis
Differential bearing preload
Lubricant Types

Axle Shaft/C.V. Repair - 10%

CV boot installation
Drive axle noise diagnosis (2 questions)
CV joint operation
Vibration Diagnosis

Clutch Diagnosis & Repair - 10%

Clutch disc operation
Noise diagnosis
Chatter diagnosis
Shifting problem diagnosis

Miscellaneous - 12%

Bearing removal and installation procedures
Drive train noise diagnosis
Gear recognition
Trans interlock function
Understanding how direct drive & gear reduction is accomplished

SAMPLE QUESTION:

The main reason for making a rear end gear tooth contact pattern is to check:

- A. Carrier end-play.
- B. Carrier bearing preload.
- C. Axle gear clearance.
- D. Pinion depth.

ANSWER: D